Demographic aging

Background Paper

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DEMOGRAPHIC AGING: THE ECONOMIC CONSEQUENCES

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INTRODUCTION

The term "demographic aging" refers to an increase in the relative weight of the elderly in the total population. The aging of the Canadian population has come about largely because of declining fertility rates and, to a lesser degree, because of an increase in average life span.

Canada experienced a sharp demographic increase following the Second World War. Men and women now between the ages of 25 and 45 are members of this "baby boom" that will accelerate the demographic aging process in Canada in the first decades of the twenty-first century. By the time these people retire, roughly one in every five Canadians will be 65 years of age or more, compared to approximately one in 10 today.(1) What is more, while senior citizens will form an increasingly large proportion of the population, the percentage of young people will decline. And, even more important in economic terms, the number of seniors 65 and over will increase more quickly than the number of individuals of working age.

Demographic changes affect all areas of human activity: economic, social, cultural and political. This paper focuses mainly on the effects of demography on the economy. Demographic aging can influence the economy in two ways. First, it can change the percentage of total goods and services produced (GNP) that goes to the elderly. Second, the slower increase in the labour force can have an effect on the economy's capacity to provide those goods and services, that is to say on the growth and level of GNP. The economic impact of the aging of the Canadian population will

(1) Health and Welfare Canada, *Charting Canada's Future: A Report of the Demographic Review*, 1989, p. 22.

in fact be felt in all areas. Aging alters consumer behaviour and saving patterns and poses numerous challenges, particularly as regards funding for retirement, housing and health care. Its potential repercussions for the size of the burden imposed on the economy as a whole and on public finances is, however, difficult to assess.

In this paper, we examine the present situation of the elderly and attempt to determine the major demographic trends that could have consequences for health, public pension plans, housing, consumption and savings, the labour market and productivity.

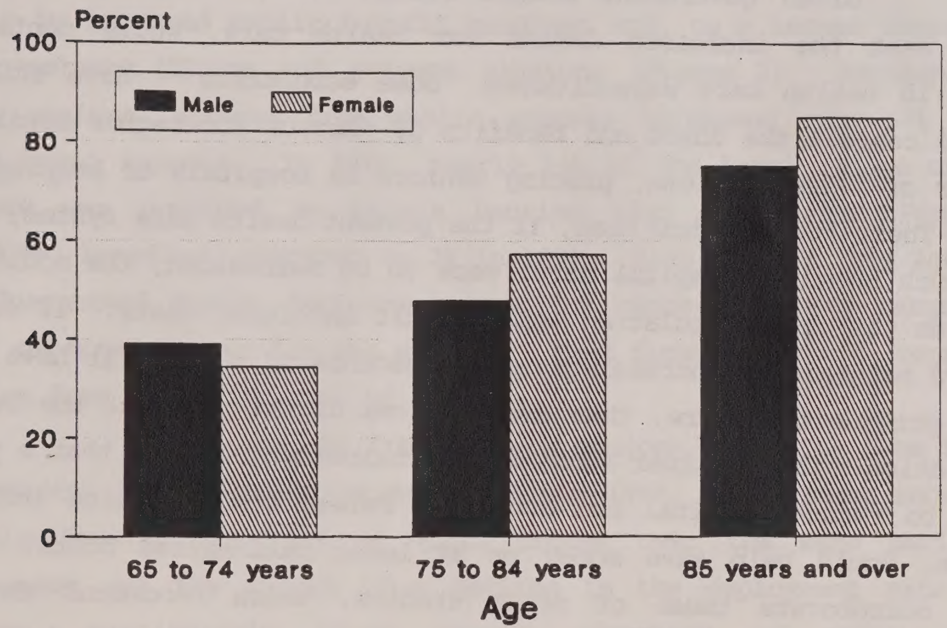
HEALTH CARE

The mortality rate of individuals aged 65 and over has declined sharply in recent decades. Consequently, the average life expectancy of this group has increased. Advances in medical research and healthier lifestyles have helped improve the health of the population as a whole. However, a longer life does not necessarily mean that people will live more years in good health. Among those 65 and over, the number of disabled days, the percentage of the population restricted in its main activity and the percentage of individuals claiming to suffer from at least one health problem are distinctly higher than the national averages. In particular, people of very advanced age, 75 years or more, tend to suffer health problems and disabilities to a greater extent than the rest of the Canadian population.

In 1986, more than 45% of individuals 65 and over, a majority of them women, claimed to suffer from at least one type of disability. Since women live longer than men, they also suffer longer periods of disability. As shown in Figure 1, disability rates increase sharply with age. However, having a disability does not necessarily mean a great loss of independence. Among the disabled elderly, only 16% live in an institution. Thus, even though the vast majority of senior citizens do not require care and can get by on their own, many nevertheless need some form of treatment, aid, assistance or care.

Since the incidence of disease and sickness increases with age, an aging population consumes more hospital and medical care. Increased demand for health services can therefore reasonably be expected over the coming decades. In fact it is possible to discern two major trends: first, a rising need for hospital care and, second, greater demand for home and community care.

GRAPH 1
Disability Rates, 1986



Source: Statistics Canada Catalogue 82-615.

Health care for the elderly is currently much costlier than that for the rest of the population. A recent study(2) indicates that health care spending is 4.5 times greater for Canadians 65 and over than for Canadians under 65. The study also states that care for seniors 75 and over is even more expensive, being 6.7 times that of care provided to individuals less than 65. For these reasons, a number of analysts are concerned about the impact that growth in the percentage of the elderly will have on health care costs.

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(2) M.A. Burke, "Implications of an Aging Society," *Canadian Social Trends*, No. 20, Spring 1991, p. 8.

The increased number of elderly people is sometimes perceived as a threat or burden. Some point out that increased life expectancy does not necessarily mean an increase in the number of additional years without health problems and even consider extended life expectancy a questionable benefit. Others are more concerned with the repercussions of aging on the hospital situation. They say that the current health care needs of the elderly, which used to be provided by families and religious institutions, may no longer be met because of the break-up of the family and the increased number of single individuals.

Given government budget restrictions, a strategy must be found to meet the increased demand for health care, while containing increases in health care expenditures. Some economists(3) have tried to assess and compare the costs and benefits of various strategies involving, to greater or lesser degrees, placing seniors in hospitals or keeping them at home. Their studies show that, if the present health care system, which is very much based on hospital care, were to be maintained, the additional demand from the aging population would result in higher costs. If current trends are maintained, increasingly large amounts of money will have to be spent to provide this care, thus denying some of the needs of the rest of the population. On the other hand, these studies also reveal that a policy designed to reduce hospital bed occupancy rates, combined with increased home care, would help save money or at least rationalize costs. These findings corroborate those of other studies, which recommend that the health care system should promote the greatest possible functional autonomy for the elderly, thus meeting their wish for independence.

Finally, other analysts(4) have observed that poor health and functional disabilities in the elderly can often be attributed to

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(3) On this subject, see P.A. Julien and B. Vermot-Desroches, "Québec 2001: Vieillissement de la population et coûts de la santé," *Futuribles,* No. 143, May 1990, p. 17-29; and Woods Gordon, Management Consultants, *Investigation of the Impact of Demographic Change on the Health Care System in Canada,* 1984.

(4) I.P. Felligi, "Can We Afford an Aging Society?", *Canadian Economic Observer,* October 1988, p. 4-21 to 4-23; K.G. Manton, "Demand and Supply of Health Care Services," *Aging with Limited Health Resources,* Proceedings of a Colloquium on Health Care, Winnipeg, 1987, p. 39-49.

preventable diseases and recommend that preventive measures be taken to postpone the onset of disease and disability. In their view, efforts to prevent disease and promote health must continue since their direct result will be better health for the population as a whole.

PENSION PLANS

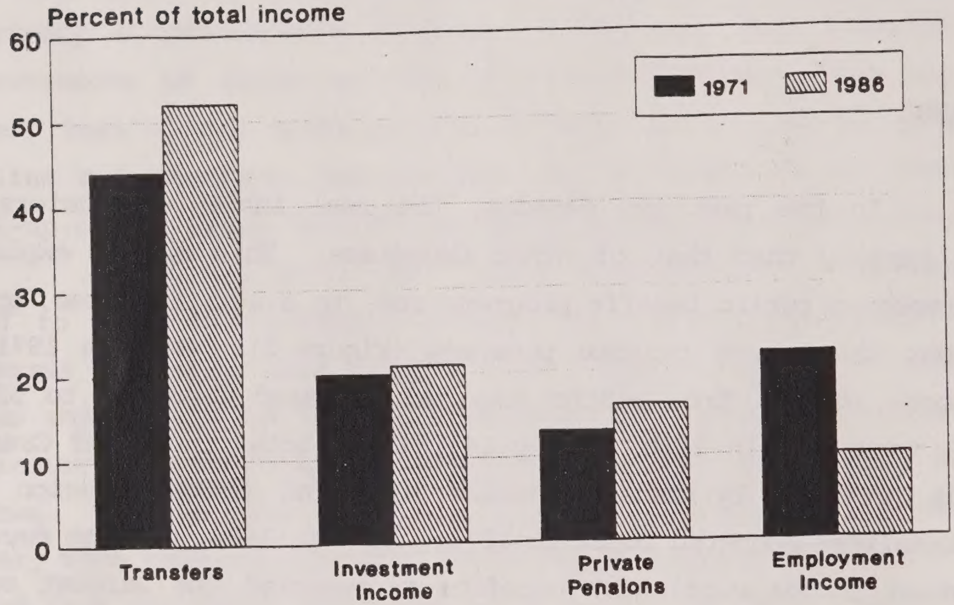
In the past two decades, the real income of seniors has grown more rapidly than that of other Canadians. This can be explained mainly by improved public benefit programs and, to a lesser degree, growth in investment income and private pensions (Figure 2). Between 1971 and 1986, seniors' incomes from public sources increased from 44% to 52% of their total incomes. In 1986, nearly 14% of the total income of Canadian seniors was provided by Canada Pension Plan and Quebec Pension Plan (CCP/QPP) benefits, compared to 2% in 1971. Also in 1986, Old Age Security and Guaranteed Income Supplement benefits represented the largest source (34%) of total income for the elderly. That figure, however, represented a decline from the 1971 level of 40%.

Total income from private sources thus fell from 56% to 48% of seniors' total income between 1971 and 1986. Employment income dipped sharply from 22% to 10% of total income over the same period. This phenomenon was the result of a decline in the employment rate of older workers, particularly those taking advantage of early retirement opportunities. In addition, income from investments and private pension plans represented an increasingly larger share of total income for seniors 65 and over, having risen from 33% to 37%.

Despite the increase in real income, the average income of the elderly remains well below that of the rest of the population. Although the percentage of low-income seniors has fallen over the years, the problem of poverty among the elderly persists. According to Statistics Canada,[5] 19% of people 65 and over, of whom many were elderly women, had

(5) C. Lindsay and S. Donald, "Income of Canada's Seniors," *Canadian Social Trends*, No. 12, Fall 1988, p. 22.

GRAPH 2
Sources of Income, 1971 and 1986



Source: Lindsay and Donald, "Canadian Social Trends", Autumn 1988.

incomes below the department's low-income cut-offs in 1986. More specifically, 46% of women in that group living alone and 32% of elderly men living alone had small incomes, as did 10% of elderly husband-wife families. Public benefits therefore remain essential for members of these groups.

Public spending on retirement benefits takes up a large part of the federal government's social affairs envelope. According to Felligi's estimates,(6) retirement benefits, which currently represent

(6) Felligi (1988), p. 4-26.

roughly one-quarter of combined health, education and pension program spending, could reach 40% of the total by the year 2036. Since public sources provide the elderly with a large proportion of their incomes, some analysts fear that the aging population implies the government may have increasing difficulty in financing its pension plan in the years to come. They explain that, since the Canada Pension Plan taxes the working generation to pay benefits to the retired generation, the relatively fewer workers will have to contribute more to the plan to meet the needs of the relatively larger number of elderly retirees. In a 1989 report,(7) the Economic Council of Canada states that benefits promised by the CPP/QPP to cover the future requirements of existing contributors will not be compromised if the productive potential of the Canadian economy expands adequately. The incidence of demographic aging on overall productivity is discussed below.

Reliance on public assistance benefits depends to a large degree on what people do with their retirement income. Snell and Brown(8) studied the economic behaviour of retirees to determine the strategies they use to improve their financial situation following the decline in income that generally follows retirement. The findings indicate that, in general, retirees change their spending behaviour by reducing consumption. The study also reveals that few retirees decide to return to work in order to maintain or improve their income levels and that the small number of retirees who find work during their retirement years is determined to a large extent by job market opportunities. Snell and Brown also note that only a small number of retirees invest, either because do not have enough assets or because they find investing too sophisticated; education levels appear to play an important role in this regard. According to the findings of this study and the current revenue trends, it is likely that the elderly will gradually change their economic behaviour.

- First, since the elderly of tomorrow will be more educated than those of today, they can be expected to be more capable of managing their assets

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(7) Economic Council of Canada, *Legacies,* 26th Annual Review, 1989, p. 59.

(8) M.L. Snell and K.H. Brown, "Financial Strategies of the Recently Retired," *Canadian Review on Aging,* Vol. 6, No. 4, p. 290-303.

and making good investments. Baby-boomers are more likely than their predecessors to invest part of their income and take advantage of private retirement plans. Consequently, one can imagine that for future generations there will be more such source of income. Reliance on public assistance programs, which pay benefits based on beneficiaries' incomes, should likely decline.

- Second, it goes without saying that low- and middle-income individuals are not able to set enough money aside in savings or profitable investments. As long as there is a high risk of poverty among the elderly, they will remain heavily dependent on government income security programs after retirement.

- Third, there must be sufficient access to the job market to encourage the elderly generation of tomorrow to retire later in life. Greater job market access for seniors would seem justified, given their improved health and longer life expectancy. Higher employment levels among seniors can only have a positive effect on public spending on retirement benefits.(9) As long as elderly workers continue to work, the taxes they pay and contributions they make will, at least in part, help ease the tax burden for all taxpayers.

While some analysts favour guaranteed retirement incomes for the elderly of the future, others emphasize that it could be a better idea to provide some people with more services than more cash. Research should be conducted to determine types of goods and services that could be provided other than cash payments and what proportion of assistance might be provided in this form rather than in the form of retirement income. This possibility is not incompatible with the view of those who recommend a re-examination of public pension universality, according to which disadvantaged seniors and retirees with relatively large incomes are treated equally.(10)

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(9) Felligi (1988), p. 4-26.

(10) G. Mathews, *Le vieillissement démographique et son impact sur la situation des personnes âgées et des services qui leur sont offerts,* INRS-Urbanisation, April 1988, p. 120-124.

HOUSING

Senior citizens, like the members of other age groups, do not form a homogeneous whole; they live in single family homes and apartments, as well as in old-age homes and other types of institutions. However, a larger percentage of them than of younger population groups own their own homes; in the mid-1980s, some 80% of families whose head was 65 or over did so, compared to 71% of all families. In addition, elderly homeowners have usually paid off their mortgages, so that their housing costs are generally lower than those of younger owners. However, the proportion of income spent on housing is relatively higher for elderly people who rent.

It can be expected that the increasing proportion of seniors and new housing arrangements will have an impact on the housing market. Indeed, it is expected that certain demographic trends will affect future housing demand.

TABLE 1

LIVING ARRANGEMENTS
(%)

	1971	1986
Living alone	20.4	30.0
Living with spouse	31.9	32.9
Living with other persons	33.3	19.0
Living in an institution	11.8	16.0
Other	2.6	2.1

Source: G.E. Priest, "Living Arrangements of Canada's Older Elderly Population," *Canadian Social Trends,* No. 12, Fall 1988, p. 26-30.

- First, the percentage of single individuals or individuals living alone is increasing. Between 1971 and 1986, the number of elderly living alone rose from 20% to 30%. This trend should continue and even grow, particularly as a there is an increasing number of individuals who are divorced or never married and there is a declining average number of

children per family. Since 100 single individuals consume more housing than 50 couples, this trend could be a cause of the increased demand for housing.

- Second, the financial situation of the elderly can be expected to be different in the future. The increasing presence of women in the job market has raised household income and in addition, more and more elderly individuals are enjoying the material security provided by indexed pension plans, tax-free investments and real estate assets. This trend could reduce demand for social housing and increase demand for private accommodation.

- Third, many senior citizens prefer to live independently in their own homes, their health and financial resources permitting. It is expected that physical exercise and healthy eating habits will help the elderly to remain active until a more advanced age. In addition, despite certain physical disabilities, seniors generally wish to stay in their own homes as long as possible. Minor changes to accommodation could enable seniors to do so.

- Fourth, more and more seniors are living in institutions. By the start of the twenty-first century, nearly 20% of seniors 75 and over will be doing so. The demand for institutional care is therefore likely to grow. According to Priest, "Finding accommodation for the increasing number of elderly people living in institutions amounts to the equivalent of finding new and highly specialized accommodation, in the space of 15 years, for the present population of a city the size of Saint John, Sherbrooke or Thunder Bay".(11)

- Lastly, in the longer term, demographic aging could have the effect of lowering demand for new housing, since the rising number of elderly and the increasing death rate could result in housing vacancies.

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(11) G. Priest, "The Demographic Future," *Canadian Social Trends,* No. 17, Summer 1990, p. 6.

On balance, the housing market will not only have to adapt to a faster growth in the number of elderly people, but also to new characteristics in that population. New forms of housing and new living arrangements should begin to appear.[12] In the medium term, existing housing will likely have to be adapted to meet the specific needs of the elderly. In the longer term, a decline in demand for new housing may be expected; in the very long term, one can even anticipate a surplus of available housing. The private sector will have to take up the challenge of providing the elderly with the types of housing they need. Lastly, since average income for seniors is currently far below that of the rest of the population and a relatively large number of people 65 and over are living under the poverty line, government assistance will remain essential, particularly for this group.

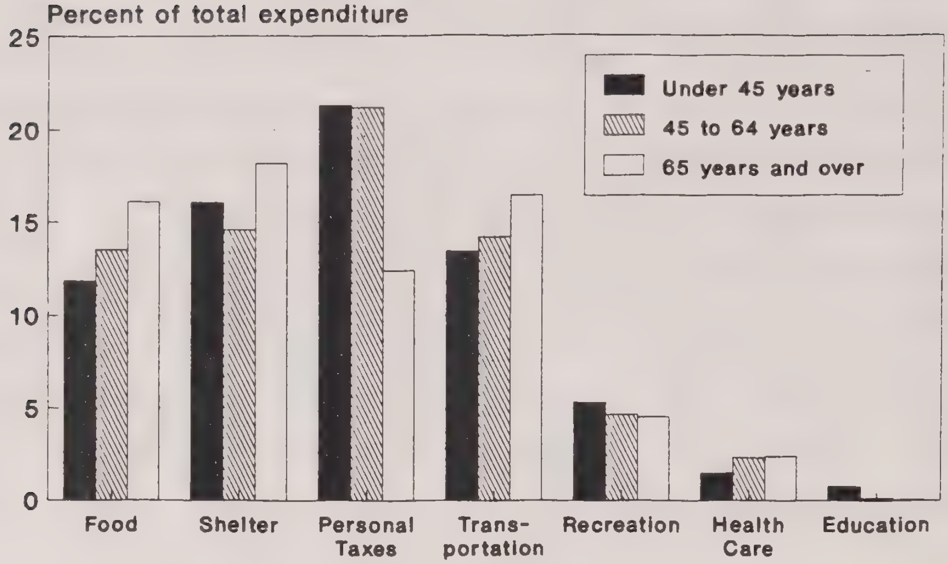
CONSUMPTION AND SAVINGS

As is the case for income, the consumer spending of people 65 and over is relatively lower than that of members of younger groups. As shown in Figures 3 and 4, it is cheaper to live as a couple or family than alone. The figures also show that seniors tend to consume fewer of certain goods and services and appreciably more of others, both public and private. Food, housing and health care generally come to account for a larger percentage of total consumer spending as single persons or heads of households age, while spending on recreation and education declines. This means that demographic changes will have an impact on overall consumption rates and therefore on savings rates.

The life cycle theory is often used to explain how individual economic behaviour changes with age. According to this theory, an individual lifetime is divided into three significant economic stages: pre-job market, job market and retirement. According to the theory, savings rates are lower for young people and the elderly and higher for mature adults. Thus, in the first and third stages, individuals are

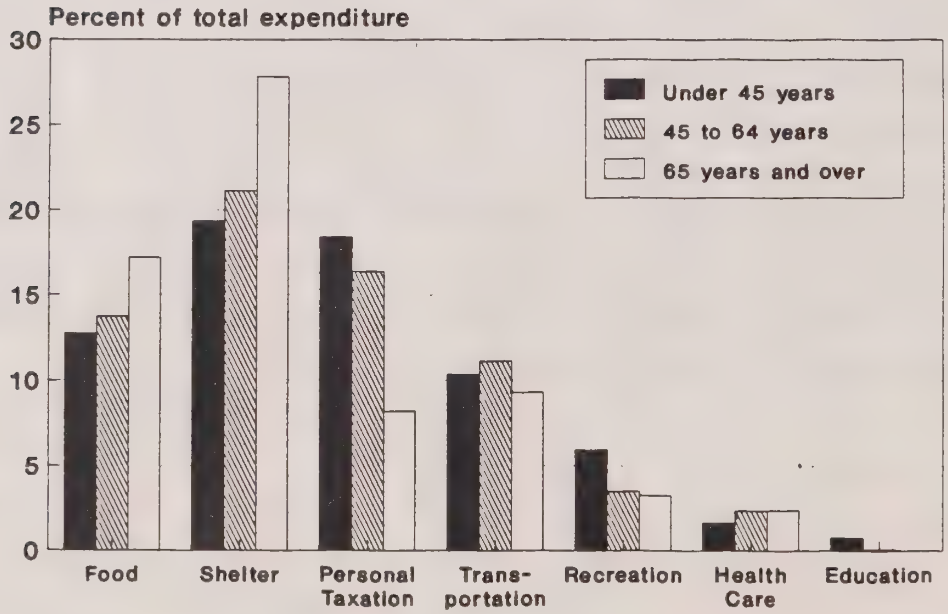
(12) On this subject, see Canada Mortgage and Housing Corporation, *Housing Choices for Older Canadians*, Ottawa, 1987.

GRAPH 3
Average Family Expenditure
(2 Adults)



Source: Statistics Canada.

GRAPH 4
Unattached Indivuals Average Expenditure



Source: Statistics Canada.

essentially dependent on their family or on the state, or both. Individuals build their savings before retirement in order to finance consumption during retirement. In macroeconomic terms, this assumption implies that, as members of the baby boom generation move into the mature adult category, they could increase savings levels in the medium term. In the long term, however, the increased number of elderly in the population could lead to a reduction in total national savings.

Jenkins(13) has analyzed the repercussions that demographic change could have on consumption and savings. Contrary to the supporters of the life cycle theory, he observes that seniors have very high savings rates, often equivalent to those of adults in their prime. He explains that seniors tend to save a great deal because of their uncertain life expectancy, because their purchasing power can be eroded by inflation and the because of the desire to leave a legacy. In short, the findings of his analysis imply that as baby-boomers reach maturity they could individually increase their rates of saving. Thus, when they retire, the national savings rate should not drop drastically. In Jenkins's view, this phenomenon could eventually result in a major increase in capital stock in Canada. In other words, the availability of savings should promote investment, economic growth and thus higher per capita income.

LABOUR MARKET AND PRODUCTIVITY

As stated above, a large share of public spending is devoted to the elderly, and, if present spending levels are maintained, the proportion allocated to individuals 65 and over may increase considerably. Government revenues come in large part from taxes and contributions by workers: all other things being equal, an increase in the number of taxpayers and contributors means an increase in public money. However, because of the aging of the population, it is expected that there will be a smaller number of young people trying to enter the job market and a larger number of older and retired workers. Thus, aging could affect the

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(13) P.C. Jenkins, *Effects of Changing Age Structure on Consumption and Savings*, Discussion Paper No. 89-05, Department of Finance, 1988.

government revenues used to finance various social programs, particularly those for the elderly.

The demographic dependency ratio is generally used to measure the number of individuals supported by each worker. This ratio is calculated by dividing: the number of dependants (individuals 15 years or less and 65 years or more) by the number in the total labour force. The dependency ratio has sharply declined since the mid-1960s and, according to estimates, should stabilize over the next two decades. However, when the first baby boom groups reach the age of 65, the labour force will be relatively smaller and the dependency ratio will rise sharply. A larger number of women in the labour force and a higher employment rate for older generations could partially offset the expected relative decline in the labour force's size and thus reduce the dependency ratio.

A reduction in the relative size of the labour force could, other things being equal, cause a decline in per capita production and thus lead to a lower standard of living. Raising taxes in order to increase transfers to the elderly could stifle production further unless technological changes offset the decline in the relative number of workers. To maintain or improve the general standard of living, new technologies should be adopted and labour force productivity should be improved, which means that economic growth must be stimulated.

Some analysts recommend that the elderly be considered as an economic resource. They maintain that a policy promoting employment for seniors would help lower support costs paid by public authorities, make it possible to take advantage of the skills and experience of older workers and improve seniors' physical and psychological well-being. In short, the higher employment levels, the smaller the social burden.

However, there is no agreement on the effects that the aging of the labour force may have on productivity.(14) The effects of aging on work performance and the ability to work probably need to be studied further. In this regard, the effects of age on individual productivity and

(14) See on this subject M. MacGregor, *Aging and Productivity*, Department of Finance, Canada, 1988.

the extent to which experience and training can offset any physiological decline are two topics of particular interest. Those who predict increased productivity despite demographic aging maintain that, except where technological innovation means that older workers lose some of their advantage over younger workers, individual productivity generally improves during one's working life, as one acquires experience and skills. In this case, retraining programs for older workers should be introduced to enable the older labour force to adjust to new technologies and new production processes.

GOVERNMENT REVENUES

Governments play an important role in economic activity. To be able to act as consumers of goods and services and suppliers to individuals and corporations, governments must have various sources of revenue: individual and corporate income taxes, taxes on goods and services, inter-governmental transfers and loans. The repercussions that demographic changes could have on these various types of income sources deserve careful examination. The analysis here is restricted to the impact of the individual income tax on tax receipts.

Individual income tax depends on the size, structure and income level of the population. Based on the various demographic trends, two possible scenarios can be anticipated:

- First, a decline in the rate of growth of the labour force as a result of demographic aging could bring about a reduction in the rate of growth of government revenues. Given the progressive nature of tax rates, this expected drop in government revenues could be partially offset by real growth in individual incomes.

- Second, massive participation by older workers in the labour market could make it possible to maintain the tax base and, consequently, individual income tax levels.

CONCLUSION

Significant changes in the age structure of the population will bring about social and economic changes in the first half of the next century. Slower growth and an aging population will affect the job market, composition of total demand, savings rates and capital accumulation rates. They will also have repercussions for the distribution of income between working and non-working members of the population. A smaller labour force in future could face a higher cost per worker to provide economic support for the large number of elderly. In particular, some estimates give rise to the fear that a growing share of government spending will have to be allocated to the elderly, rather than to the rest of the population. For example, the OECD(15) predicts that, if present spending levels are maintained, Canada will devote one half of public spending to the needs of the elderly in the next 50 years, whereas spending on the rest of the population should decline (15% for children and 35% for those 15 to 64). For some, the social burden will be increasingly heavy. In this regard, Burke writes: "Canadians will most likely have to choose between increasing tax rates and social security contributions or lower levels of social benefits."(16)

However, other empirical studies suggest, on the contrary, that: "... the growth rate of government expenditures which is attributable to an aging society will be comparable to the economic growth rates observed during the last 30 years. Therefore, should long-term economic growth continue... then public expenditures in health, education and pensions would represent 50 years from now about the same claim on the economy as at present -- in spite of the aging of the population."(17) In particular, productivity should play a major role in maintaining and improving the standard of living of future generations.

It would appear that that standard of living will depend less on the size of the population than on the skills of our human capital and on productivity. In this respect, the Economic Council of Canada maintains that it is possible to take immediate action to improve

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(15) OECD, *Aging Populations: The Social Policy Implications,* 1988.

(16) Burke (1991), p. 8.

(17) Felligi (1988), p. 4.1-4.2.

long-term productivity. The Council suggests, first, that investments be made in physical and human capital, as well as in research and development. It adds that we must also promote the participation of the elderly in the labour force. In short, these are sectors where governments have much room to manoeuvre in developing policies.

It is important to emphasize that the projected increase in the number of individuals 65 and over as a percentage of total population is not expected in the immediate future. The repercussions of population aging will appear slowly over the next few decades. Since this is a chronological process, an action plan can be established to meet short-term needs and to tailor that plan to more long-term objectives. It should not be forgotten that future workers, whose taxes and contributions will help finance public programs for the elderly, are children today. In short, sound planning and judicious use of resources with this in mind should not compromise the vitality and prosperity of Canadian society in the future. It is possible to secure the well-being of future generations from the youngest to the oldest.

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